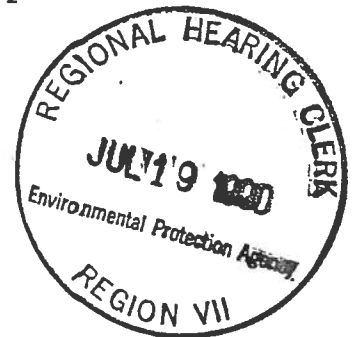


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101



IN THE MATTER OF:

ALUMINUM COMPANY OF AMERICA
Riverdale, Iowa,

Respondent.

Proceedings under Section 106(a)
of Comprehensive Environmental
Response, Compensation and
Liability Act of 1980, amended
by the Superfund Amendments
and Reauthorization Act of 1986,
42 U.S.C. Section 9606(a).

Docket No. 90-F-0027

ADMINISTRATIVE ORDER ON CONSENT

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ADMINISTRATIVE
ORDER ON CONSENT

I. PRELIMINARY STATEMENT

1. This Administrative Order on Consent ("Order") is issued to the Aluminum Company of America (hereinafter "ALCOA" or "Respondent"), pursuant to the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), as amended by the Superfund Amendments and Reauthorization Act of 1986 ("SARA"), 42 U.S.C. Section 9606(a). The authority to issue such orders pursuant to Section 106(a) of CERCLA/SARA was delegated to the Administrator of the United States Environmental Protection Agency ("EPA") by Executive Order 12580, 57 Fed. Reg. 2,923, et seq., dated January 23, 1987, and

was further delegated to the Regional Administrators by EPA Delegation Nos. 14-14-A, dated April 16, 1984, and 14-14-C, dated September 13, 1987. This authority was subsequently delegated to the Director, Waste Management Division, by EPA Delegation No. R7-14-14C, dated May 16, 1988.

2. By signing this Order, the Respondent: admits the jurisdiction of EPA regarding issuance of this Order, agrees to undertake and complete all actions required by the terms and conditions of this Order, and consents to be bound by the requirements set forth herein.

3. This Order shall apply to and be binding upon Respondent, its successors and assigns. In its contracts regarding the work to be performed herein, Respondent shall require its contractors, subcontractors, laboratories and consultants to perform such work in accordance with the requirements of this Order, including all approved work plans. Respondent shall provide a copy of this Order or cause a copy of this Order to be provided to all contractors, subcontractors, laboratories and consultants retained to conduct any portion of the work performed pursuant to this Order, prior to the date such work is initiated. No change in ownership of Respondent's facility or corporate status of Respondent shall in any way alter Respondent's responsibilities under this Order.

4. Pursuant to the requirements of Section 106(a) of CERCLA/SARA, 42 U.S.C. Section 9606(a), the State of Iowa, through the Iowa Department of Natural Resources, and the State

of Illinois, through the Illinois Environmental Protection Agency, have been notified as to the issuance of this Order.

II. STATEMENT OF PURPOSE

This Order requires the Respondent to undertake appropriate response actions at its facility in Riverdale, Iowa (the "Facility") and for portions of Pool 15 of the Mississippi River which is adjacent to the Facility. Such actions include conducting: 1) sediment and soil investigations in onsite drainageways (including wetlands); sediment investigations of PCB-contamination in Mississippi River Pool 15 that EPA determines may be attributable to ALCOA's activities; and, if required by EPA, a feasibility study to address such sediments and/or soils; 2) a Mississippi River Pool 15 Fish Sampling and Analysis Investigation and Study; 3) an investigation into, an assessment of and, if required by EPA, subsequent response actions to mitigate, polychlorinated biphenyl ("PCB") and volatile organic contamination in the vicinity of the 86-inch continuous heat treat ("CHT") line at the Facility; 4) identification of past releases of hazardous substances at the Facility and an assessment to determine the full nature and extent of contamination resulting from such releases that EPA determines may create an imminent and substantial endangerment to the public health or welfare or the environment; and 5) an assessment and removal of perchloroethene (PCE) contamination in the area of two bulk PCE storage tanks at the west end of the Facility. Depending on the results of the investigations,

studies or assessments, EPA may seek to require ALCOA to conduct additional site investigation and response activities through amendment of this Order or the issuance of additional orders. All actions required by this Order shall be in compliance with applicable law, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300, and relevant EPA guidance documents, including those listed in Appendix A, attached hereto and incorporated herein by reference, to be specified in the applicable work plan. ALCOA shall also comply with any revisions to such guidance documents, upon receipt of written notice of such revisions from EPA for work conducted after receipt of the notice.

III. FINDINGS OF FACT

1. Aluminum Company of America ("ALCOA") is a Pennsylvania corporation authorized to do business in the State of Iowa, and is the owner and operator of the Facility commonly referred to as the ALCOA-Davenport Works.

2. The ALCOA-Davenport Works Facility is located in Riverdale, Scott County, Iowa and includes ALCOA'S active production facility. Specifically, the Facility is in Sections 23, 24, 25, and 26 of Township 78N, Range 4E of the 5th principal meridian, latitude 41°32' and longitude 90°27'. The scope of the study area (also referred to herein as the site) for the work required by this Order includes the Facility and portions of Mississippi River Pool 15 ("Pool 15"), to be specified in the

applicable approved work plans. Pool 15 encompasses approximately ten miles of the Mississippi River near Riverdale, Iowa, bounded by Federal Lock and Dam ("FLD") 14 on the upriver end and FLD 15 on the downriver end. The pool extends from river mile 482.9 to 493.2, and the Facility is located at approximately river mile 488.9.

3. In 1956, ALCOA began utilization of an unlined waste oil surface impoundment at the Facility primarily for the storage of oil wastes from manufacturing operations. Between 1956 and 1979, ALCOA also placed a variety of other solid wastes into the impoundment, including grease, solvents, pickle liquors, and paint coating wastes.

4. At its greatest extent, the impoundment covered approximately fourteen (14) acres in surface area and ranged from eight (8) to twenty (20) feet in depth. The surface impoundment was located approximately 150 to 200 feet from and northwest of the Mississippi River and was bounded on the south and west by a man-made dike constructed as a flood protection measure. This dike was built with clay cores installed to bedrock. The area inside the impoundment consists of fill material overlying a sandy silt, which in turn overlies a limestone bedrock. Depth to bedrock varies from five (5) to thirty (30) feet.

5. In 1979, ALCOA, having discovered that waste oil in the surface impoundment contained PCBs in varying concentrations, voluntarily initiated a response program designed to ensure that the contaminated waste oil would be properly controlled and disposed of.

6. Pursuant to this program, ALCOA: removed all pumpable waste oil and sludge from the impoundment (completed by June 7, 1981), solidified a portion of the remaining unpumpable sludge with cement kiln dust to aid in preventing leaching of PCBs from said sludge, and retained a consulting firm to conduct an investigation and assessment regarding potential ground water contamination resulting from the release of hazardous substances from the impoundment.

7. ALCOA submitted a report to EPA of its contractor's investigation, entitled "First Annual Comprehensive Report on Ground Water at the ALCOA-Davenport Waste Disposal Site" (the "Report"), by letter dated February 28, 1983. The Report concluded that PCBs were present in both oil and ground water in the aquifers beneath the impoundment which discharged from the Facility.

8. In February 1984, ALCOA entered into and EPA issued an administrative Order on Consent (Docket No. 84-F-0004) pursuant to Section 106(a) of CERCLA, 42 U.S.C. Section 9606(a), whereby ALCOA agreed to submit an Initial Remedial Action Plan ("IRAP") designed to prevent the release of PCB-contaminated oils from the Facility. Under this Order on Consent, ALCOA installed an oil interception and recovery trench by January 1985 to collect oil being released from the impoundment and the impoundment was covered with a compacted clay cap.

9. In 1986, ALCOA entered into and EPA issued an Administrative Order on Consent (Docket No. 86-H-0009), pursuant

to Section 3013 of the Resource Conservation and Recovery Act of 1976, as amended (RCRA), 42 U.S.C. Section 6934. Pursuant to this Order on Consent, ALCOA formulated and implemented a detailed ground water monitoring plan and conducted an assessment to evaluate the effect of impoundment contaminants on public health and the environment. On February 8, 1990, ALCOA submitted to EPA a Final Ground Water Assessment that was prepared by ALCOA's contractor.

10. In 1983, EPA caught and sampled catfish and carp from Pool 15. Subsequent analysis indicated PCB-contamination in tissue of the fish at concentrations ranging from nondetectable to 4.2 parts per million (ppm), which was below the then applicable Food and Drug Administration (FDA) tolerance level of 5.0 ppm. PCBs were found in river sediments in Pool 15 in concentrations ranging from nondetectable to one sample at 8.1 ppm. Twelve miles upriver at the background sampling location station, PCBs were not detected in the river sediments.

11. In 1987, EPA caught and sampled carp from Pool 15 directly offshore from ALCOA'S impoundment. Subsequent analysis indicated PCB-contamination in the samples of carp at a mean concentration of 4.8 ppm, which exceeded the revised applicable FDA tolerance level of 2.0 ppm. None of the carp samples that were analyzed were below the 2.0 ppm tolerance level.

12. In 1988, ALCOA performed additional fish sampling investigations in Pool 15. Samples from carp and some catfish were found to contain PCBs above the applicable FDA tolerance

level of 2.0 ppm. The upper 95% confidence level of the total mean PCB-concentration for carp sampled from locations on the Iowa side of the pool ranged from 2.5 ppm to 8.16 ppm. The sample mean concentration for total PCB-contamination in the catfish at sampling location #3 near the ALCOA impoundment was 2.87 ppm. In June 1989, the State of Iowa's Department of Natural Resources (IDNR) issued a fish consumption advisory for carp on the Iowa side of Pool 15. In this advisory, IDNR also notified the public that some catfish in Pool 15 may contain levels of PCBs above the FDA tolerance level. In April 1990, IDNR issued a second fish consumption advisory for carpsuckers (also referred to as white carp).

13. In 1988, ALCOA sampled river bottom sediments over a 300 feet wide by 1400 feet long section of Pool 15 adjacent to the impoundment. PCBs were detected in the six inch depth composite sediment samples with a sample mean concentration of 0.93 ppm for total PCBs. The corresponding upper 95% confidence limit on the mean for total PCBs in the sediments sampled was 1.09 ppm. The primary objective of ALCOA's study was to evaluate total PCB-concentrations in sediments near the impoundment. However, the scope of the study did not include characterization of potential peaks of high PCB-concentrations known as "hot spots," which EPA believes to be significant because of EPA's belief that fish bioaccumulate PCBs, and that the relatively low concentrations of PCBs in the sediments may serve as the primary source of PCBs in the fish.

14. On June 24, 1987, during a routine Toxic Substances Control Act (TSCA) inspection of ALCOA's Facility, ALCOA informed the EPA inspector that PCB-contamination of ground water had been found in the vicinity of its 86-inch CHT line. The inspector observed oil in the bottom of accumulator pits associated with the line. ALCOA stated that the oil in the bottom of the pit contained PCBs in concentrations ranging from 100 to 200 ppm. There were also two monitoring wells which had been installed in this area to monitor ground water contamination.

15. On August 9, 1989, EPA received a letter from ALCOA discussing the presence of PCBs in ground water in the vicinity of the 86-inch CHT line. Reportedly, oil leaking into the accumulator pits under the 86-inch CHT line is contaminated with PCBs (normally in excess of 50 ppm). Hydraulic oils containing PCBs in concentrations as high as 49,000 ppm were used in the operation of this line until approximately 1979. According to ALCOA, PCBs have not been used in this operation since 1979.

16. In its letter to EPA on August 9, 1989, ALCOA indicated volatile organic compounds (VOCs), including vinyl chloride, trans-1,2-dichloroethylene, and 1,1,1-trichloroethane, had been detected in the ground water in the vicinity of the 86-inch CHT Line. In its data transmittal to EPA on October 20, 1989, ALCOA also indicated perchloroethene had been detected in the ground water in the vicinity of the 86-inch CHT line.

17. During sampling of monitoring wells for the former surface impoundment, ALCOA has found benzene at a concentration

of 1500 parts per billion (ppb) (Well EI, April 1989), vinyl chloride (300 ppb), trans-1,2-dichloroethylene (560 ppb), and other VOCs in samples of ground water. The above analytical results were the maximum levels detected.

18. In a letter dated December 12, 1989 to IDNR, ALCOA identified the discovery of a release of perchloroethene (PCE) into soils in the area of two 10,000 gallon PCE storage tanks at the west end of the Facility. ALCOA excavated approximately 300 cubic yards of PCE-contaminated soil and placed the waste into a storage pile at the Facility. In a letter dated February 5, 1990 to EPA, ALCOA indicated that analysis of soil samples from the excavated area revealed PCE-contamination remained in concentrations averaging 14,300 parts per million (ppm) in five samples.

19. The geology and hydrogeology at the Facility consists of a fill material overlying a thin (one to eight foot thick) alluvial aquifer, which is associated with the Mississippi River. This alluvial aquifer is in turn underlain by a fractured limestone bedrock which contains minor solution features. Water level data indicate that the alluvial aquifer is hydraulically connected with the Mississippi River and flows predominately towards the river except during short-term seasonal changes in flow direction. The limestone bedrock aquifer flows in a southerly direction towards the Mississippi River. The flow of the bedrock aquifer is reversed at the Facility when ALCOA pumps from its bedrock production wells, at which time ground water

flow direction in the bedrock aquifer is northerly towards the Facility production wells.

20. Exposure to the hazardous substances which have been identified as existing in the study area may occur by different routes. These routes include, but are not limited to, surface water consumption, consumption of contaminated fish, direct contact with PCB-contaminated oil, and direct contact with contaminated ground water.

21. PCBs are known to be persistent in the environment and are believed to bioaccumulate in living organisms and may cause adverse health effects. PCBs are carcinogenic in animals and may enhance the effects of other carcinogens in humans. The potential for adverse health effects exists from exposure to the volatile organic compounds (VOCs) identified at the Facility. Specifically, vinyl chloride and benzene are recognized as human carcinogens.

22. Pursuant to the Safe Drinking Water Act, as amended, 42 U.S.C. Section 300f et seq., EPA has established, or has proposed, a maximum contaminant level (which is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system) for VOCs identified in the ground water at the Facility. The maximum contaminant levels for the identified VOCs are:

<u>Substance</u>	<u>MCL In micrograms/liter</u>
vinyl chloride	2
trans-1,2-dichloroethylene	100 (proposed)
1,1,1-trichloroethane	200
perchloroethene	5 (proposed)
benzene	5

23. Based upon the presence of hazardous substances at the Facility and in the study area, in conjunction with the site geology and hydrogeology, EPA alleges an endangerment to public health and the environment exists.

24. The parties recognize, and intend through this Order, to further the public interest in avoiding prolonged and complicated litigation between the parties and in expediting the performance of cleanup activities at the Facility.

IV. CONCLUSIONS OF LAW

1. The ALCOA-Davenport Works Facility is a "facility" as defined in Section 101(9) of CERCLA/SARA, 42 U.S.C. Section 9601(9).

2. ALCOA is a "person" as defined in Section 101(21) of CERCLA/SARA, 42 U.S.C. Section 9601(21).

3. The substances identified in the findings of fact as having been released and/or threatened to be released are each a "hazardous substance" within the meaning of Section 101(14) of CERCLA/SARA, 42 U.S.C. Section 9601(14).

4. There has been an actual and/or there is a threatened "release" of hazardous substances at the site, as defined by Section 101(22) of CERCLA/SARA, 42 U.S.C. Section 9601(22).

5. ALCOA is a liable party under Section 107(a) of CERCLA/SARA, 42 U.S.C. Section 9607(a).

V. DETERMINATIONS

Based on the foregoing findings of fact and conclusions of law, the Director of the Waste Management Division of EPA has determined that:

1. the actual and/or threatened release of hazardous substances at and/or from the site may present an imminent and substantial endangerment to public health or welfare or the environment; and

2. the actions required by this Order are necessary to protect the public health and welfare and the environment.

VI. ORDER

Based upon the foregoing findings of fact, conclusions of law, determinations and the record in this matter, it is hereby ORDERED AND AGREED that ALCOA shall conduct the following response actions. All investigations and work required by the terms of this Order shall be conducted in accordance with the NCP and relevant EPA guidance documents, including those listed in Appendix A, to be specified in the applicable work plans, and any revisions to such guidance documents upon ALCOA's receipt of written notice from EPA regarding such revisions for work conducted after receipt of the notice.

A. Sediment/Soil Investigations and Feasibility Study

1. ALCOA shall conduct: sediment and soil contamination investigations in onsite drainage ways (including wetlands), sediment investigations of PCB-contamination in Mississippi River

Pool 15 ("Pool 15") that EPA determines is attributable to activities at the ALCOA Facility, and, if required by EPA, a feasibility study to address such contaminated sediments and/or soils. The investigations and feasibility study shall be designed to meet the following objectives:

- a. evaluate the vertical and horizontal extent of PCB-contamination i) in sediments and soils onsite, and ii) in sediments in Pool 15 that EPA determines is attributable to activities at the ALCOA Facility;
- b. identify PCB-contamination sources and migration pathways in sediments and soils;
- c. identify and evaluate onsite and offsite features that affect contaminant migration;
- d. sufficiently characterize PCB-contamination in the sediment and soils to permit an informed risk-based management decision, based on an evaluation of risks that need to be reduced or eliminated and exposures that need to be prevented or reduced;
- e. collect sufficient information to determine contaminant fate, transport, and volume of contaminated material; and
- f. evaluate applicable remediation alternatives, including costs and environmental risks associated with remediation.

2. The above sediment and soil investigations shall quantify PCB-concentrations in suspended sediments and bottom sediments with depth in Pool 15 relative to potential uptake of

PCBs by fish. The investigations shall also quantify the vertical and horizontal extent of PCB-contamination in onsite drainage pathways, including onsite wetlands. These investigations shall include any wetland, outfall, ditch, drainage area or discharge on or from the ALCOA Facility. For each outfall draining to the Mississippi River in which PCB-contamination is detected, the investigation shall extend to any discharge to such outfall, including sediments in any contributing sewer lines that may be acting as a source for PCBs. The design of such investigations shall be based on discharges on or from all potential sources at the ALCOA Facility, surface drainage patterns, the depositional patterns of sediments within Pool 15 related to discharges from the ALCOA Facility, the thicknesses and nature of sediments/soils, outfall points, water temperatures, depth and velocity of river flow, river bottom characteristics, and fish feeding patterns. The investigations will utilize hydraulic and sediment transport modeling techniques to evaluate sediment/soil transport at the Facility and within Pool 15. The design of the investigations should also include an evaluation of previous data and sample locations.

3. Said investigations shall also be designed to assess the location and boundaries of relative hot spots, the vertical and horizontal extent of contamination, location-specific and average concentrations of PCBs in sediments and soils, and the background levels of PCBs in sediments and soils, along with the grain size, organic carbon content, and PCB-concentration of surface

sediments/soils, suspended sediments, river sediments and river bottom sediments with depth, and the concentration of PCBs in the water both in the study locale and in an upgradient location. The grain size, organic carbon content and concentrations of PCBs in bottom sediments shall be quantified at individual locations with depth, as specified in the Sediment/Soil Investigation Work Plan required herein. Sediment and soil investigations will quantify PCB-contamination with depth. Sampling will be sufficient to assess the vertical and horizontal extent of contamination in each area of concern. Said investigation shall also be designed to identify the presence, if any, of mussels or other benthic organisms on the Endangered Species List. Sampling methods shall comply with those specified in "Guidance for Sampling of and Analyzing for Organic Contaminants in Sediments" (EPA, 1987), or other relevant EPA guidance documents, including those listed in Appendix A of this Order, to be specified in the work plan.

4. The work to be conducted by ALCOA under this Section will use a phased approach to logically identify and evaluate the extent of contamination and to determine appropriate response actions. The phases will be: 1) define potential sources of discharge to sediments from the Facility to Pool 15; 2) conduct hydraulic and sediment modeling and use the results to evaluate sediment/soil transport and define the study area for Pool 15; and 3) quantify vertical and horizontal extent of contamination.

5. Within 120 calendar days of the effective date of this Order, ALCOA shall submit to EPA an initial Sediment/Soil Investigation Work Plan for EPA's review and approval. The Sediment/Soil Investigation Work Plan shall provide a general overview of the investigation project tasks and include a Quality Assurance Project Plan (QAPP) and a Health and Safety Plan (H&SP). This Work Plan shall contain a general schedule for performance of each phase of the work required under this Section of the Order. Such schedules shall include start times based on number of days from EPA final approval of applicable work plans, sampling plans, reports of completed phases, or other documents requiring EPA approval.

6. The initial Sediment/Soil Investigation Work Plan shall include provisions for submittal of specific Field Sampling Plans (FSP) or detailed work plans for each phase of the investigation. Each FSP or Work Plan shall provide specific information regarding sampling locations, frequencies, methodologies, etc., that can only be determined after completion of the previous phase. The FSP for Phase I, Sediment/Soil PCB-Characterization of Outfalls 001-005, will be submitted along with the initial Sediment/Soil Investigation Work Plan.

7. Within thirty (30) calendar days of receipt of EPA's final approval of any Sediment/Soil Investigation Work Plan, FSP or interim detailed Work Plans, as applicable, ALCOA shall implement said work in accordance with the schedules contained in the approved Work Plan.

8. At the completion of each phase of the Sediment/Soil Investigation, ALCOA shall submit a draft phase report covering that phase of completed work for EPA review and approval. As appropriate, a detailed Work Plan or FSP for the next phase of work, including a detailed schedule for its implementation, shall be submitted with each report covering a completed phase of work. Following receipt of EPA's comments, ALCOA shall submit a final phase report to EPA for review and approval, modified in accordance with EPA's comments.

9. Following completion of all phases of the Sediment/Soil Investigations, ALCOA shall submit a draft Sediment/Soil Investigation Report to EPA for review and approval in accordance with the schedule in the approved Work Plan which will incorporate the information from all phases of the investigations. The purpose of this report will be to correlate all the data in a logical manner and to interpret the results of the investigations. Following receipt of EPA's comments, ALCOA shall submit a final Report to EPA for review and approval, modified in accordance with EPA's comments.

10. Following completion of the investigations under this Section, EPA shall conduct a Risk Assessment to determine if the levels of contaminants in the sediments or soils are a threat to public health or welfare or the environment due to the identified contaminated areas.

11. If it is determined by EPA that the levels of PCBs in sediments or soils are a threat to public health or welfare or

the environment, ALCOA shall conduct a feasibility study to evaluate the appropriate response action(s) to address contaminated sediments and soils. Further remedial investigation may be determined by EPA to be necessary to support the feasibility study.

12. If a feasibility study is determined to be necessary, ALCOA shall submit a draft Feasibility Study Work Plan for EPA's review and approval, within sixty (60) calendar days of receipt of notification from EPA that such a study is necessary. This Work Plan shall also include provisions for additional remedial investigation if necessary to support the feasibility study.

13. Within thirty (30) calendar days of receipt of EPA's final approval of the Feasibility Study Work Plan, ALCOA shall implement said Work Plan in accordance with the schedules contained therein.

14. ALCOA shall submit a draft Feasibility Study Report to EPA for review and approval in accordance with the schedule in the Feasibility Study Work Plan. Following receipt of EPA's comments, ALCOA shall submit a final Feasibility Study Report to EPA for review and approval, modified in accordance with EPA's comments.

B. Mississippi River Pool 15 Fish Sampling and Analysis Investigation and Study

ALCOA shall conduct a Mississippi River Pool 15 Fish Sampling and Analysis Investigation and Study. This Investigation and Study shall be used to determine the need to

continue or expand current advisories, to evaluate the risk to public health or welfare or the environment, and to determine if response actions for Pool 15 are necessary.

1. Within thirty (30) days of the effective date of this Order, ALCOA shall submit a draft Fish Sampling and Analysis Work Plan to EPA for review and approval. This Work Plan shall include an appropriate QAPP and H&SP. For each subsequent sampling event, ALCOA may amend the previously approved Work Plan, if necessary, or notify EPA that it intends to follow the previously approved Work Plan. The amended Work Plan or notification shall be submitted to EPA by January 30 of the year work is to be performed to permit adequate time for approvals and field preparation prior to the sampling event. The amended Work Plan or notification shall be subject to EPA review and approval.

2. Each fish sampling event shall be conducted in three locations along the Iowa side of Pool 15, including: sites 2 and 4 from ALCOA's 1988 "Characterization of PCBs in Fish of Pool 15 of the Mississippi River" (ALCOA's 1988 Study), and site 3 from ALCOA's 1988 Study, expanded downstream to include outfall 006. In addition, each fish sampling event shall include a location along the Illinois side of the river across from the ALCOA Facility, as determined by the Illinois Environmental Protection Agency (IEPA). A sampling location shall also be chosen to determine background levels for each species of fish upstream from the ALCOA Facility. The fish to be sampled shall include carp (*Cyprinus carpio*), flathead catfish (*Pylodictis olivaris*),

channel catfish (*Ictalurus punctatus*), river carpsucker (*Carpiodes carpio*), shovelnose sturgeon (*Scaphyrhynchus platyrhynchus*), sturgeon eggs (if available), smallmouth buffalo (*Ictiobus bubalus*) and freshwater drum (*Aplodinotus grunniens*), and other fish species if requested by EPA and approved by ALCOA. All fish sampled shall be within a range of the average adult size as specified in the Work Plan for that species. Fish, in which the upper 95% confidence level of the mean PCB-concentration is determined to be less than 1.0 ppm during the first sampling event, may be removed from the sampling target list for subsequent sampling events. Samples from at least ten fish of each species shall be obtained at each location, if possible. A reasonable effort, to be defined in the Fish Sampling and Analysis Work Plan, shall be expended to collect all seven (7) of each species (including sturgeon eggs) at each sampling location. This sampling shall be modeled after ALCOA's 1988 Study.

3. The 1990 sampling and analysis event of fish from Pool 15 shall begin within thirty (30) calendar days of receipt of EPA's approval of ALCOA's Fish Sampling and Analysis Work Plan for this investigation and study. Additional investigations or studies shall be conducted thereafter on a biennial basis until the upper 95 percent confidence limit on the mean total PCB-concentration drops below 2.0 ppm at each sampling locations for each species of fish and for two successive biennial sampling events. Upon meeting this criterion, ALCOA shall continue fish

sampling every three years until the mean total PCB-concentration drops below 1.0 ppm for each species of fish at each individual sampling location and for two successive three-year sampling events. The information obtained from the fish sampling and analysis events conducted by ALCOA will be used by IDNR or other agencies to determine the need to continue or expand current fishing advisories for Pool 15 and by EPA in determining if response actions for Pool 15 are necessary.

4. ALCOA shall implement each Fish Sampling and Analysis Work Plan following receipt of EPA's final approval of said Work Plan or notification, in accordance with the schedules contained therein.

5. Following each fish sampling and analysis event, ALCOA shall submit a draft Fish Sampling and Analysis Report to EPA for review and approval in accordance with the EPA approved schedule contained in the corresponding Work Plan. Following receipt of comments from EPA, ALCOA shall submit a final Fish Sampling and Analysis Report to EPA for review and approval, modified in accordance with EPA's comments.

C. Facility 86-Inch CHT Line Assessment

1. Within sixty (60) calendar days of the effective date of this Order, ALCOA shall submit to EPA for its review and approval a draft Facility 86-inch CHT Line Assessment Work Plan (CHT Line Work Plan) based, in part, on the Phase III Scope of Work submitted to EPA on October 20, 1989, to address the

EPA, EPA will determine if response actions in addition to any Phase III response actions are necessary to abate the release or threat of release of hazardous substances to the environment. Within forty-five (45) calendar days of receipt of said EPA determination, ALCOA shall submit to EPA for review and approval a Removal Action Work Plan ("RAW") which shall identify alternative response actions to address contamination in the area of the 86-inch CHT line. If treatability study activities are required to demonstrate the applicability of any alternative, such studies should be described in detail in the RAW. In addition, any applicable or relevant and appropriate requirements (ARARS) impacting the removal should be identified in the RAW. A Quality Assurance Project Plan (QAPP) and a Health and Safety Plan (H & SP) to cover all field and analytical work during the response action should also be included. Finally, the RAW should provide for implementation of the approved response action.

4. After final EPA approval of the RAW, following the public comment period, ALCOA shall implement the approved response actions, in accordance with the schedules contained therein.

5. The approved RAW shall identify a schedule for submittal of a draft Removal Action Report. The report shall be submitted when the removal has achieved cleanup levels or when removal systems are operational and demonstrating compliance with performance standards if the removal is long term in nature, involving such response actions as pumping and treatment. The

environmental contamination by hazardous substances, including PCBs, perchloroethene, and other volatile organic compounds in the vicinity of the 86-inch CHT line. The CHT Line Work Plan shall also provide for the characterization of the lateral and vertical extent of contamination and shall include: a Sampling and Analysis Plan (SAP), A Quality Assurance Project Plan (QAPP), and a Health and Safety Plan (H&SP). Following approval by EPA, ALCOA shall implement the CHT Line Work Plan to complete the assessment in accordance with the schedules contained therein. This assessment shall be based on existing data and data developed under Phase III, and should fully evaluate documented and suspected contamination in the area, sources and amounts of contamination, media affected, as well as possible migration pathways of these contaminants.

2. ALCOA shall submit a draft and final Facility 86-inch CHT Line Contamination Assessment Report to EPA for review and approval in accordance with the schedule contained in the CHT Line Work Plan. The Assessment Report shall include all data on which this Report was based, as well as sufficient information with which to verify the conclusions presented in the Assessment Report, such as stratigraphic information, engineer's drawings, sampling procedures, analytical results, quality assurance methods, etc.

3. After the assessment has been completed which adequately evaluates contamination of environmental media near the 86-inch CHT line, and after this Assessment Report has been approved by

report shall fully describe implementation of the removal action. Following receipt of EPA's comments, ALCOA shall submit a final Removal Report to EPA for review and approval modified in accordance with EPA's comments.

D. Facility Site Assessment

1. Within 120 calendar days of the effective date of this Order, ALCOA shall submit to EPA for its review and approval, a Facility Site Assessment Work Plan. The Work Plan shall include schedules for conducting work and submittal of Reports. This Work Plan shall provide for the identification and reporting to EPA of past releases of hazardous substances at the Facility and for an assessment designed to determine the full nature and extent of contamination resulting from such releases that EPA determines may create an imminent and substantial endangerment to the public health or welfare or the environment; and will include consideration of information on the entire Facility, focusing on identifying and evaluating releases and possible releases of hazardous substances resulting from production or waste management activities, including federally permitted releases [as defined in Section 101(10) of CERCLA, 42 U.S.C. Section 9601(10)] and other air emissions, to the extent such releases may have resulted in releases or discharges to surface soils, surface waters or the ground water at the Facility. The provisions of this Section of the Order do not require ALCOA to address releases sufficiently addressed under other provisions of this Order or previous Orders issued by EPA Region VII. Except as otherwise provided herein, the scope of this Site Assessment

shall include investigation of the release potential to all environmental media at the Facility, including: ground water, surface water, air, soils and subsurface gas. Said Assessment shall also include the evaluation of the migration pathways of any contamination which is observed or suspected. The Facility Site Assessment shall:

a. assess possible hazardous substance contamination at the Facility resulting from Facility processes or operations, past or present, based on the collection of written documentation and verbal information on past and present Facility waste management operations and waste management activities from sources including, but not limited to: Facility records, historical aerial photography, and interviews with present and past employees; and

b. include a visual site assessment of the entire Facility and property, observing and recording any visual evidence of releases or potential releases of hazardous substances including, but not limited to: spillage on soil surfaces, evidence of cracks in dike works, or vegetation stress. Particular attention shall be focused on those portions of the Facility where a potential for significant release exists or may have existed.

2. If EPA disapproves the Facility Site Assessment Work Plan, EPA shall notify ALCOA in writing of the disapproval, specifying the deficiencies. Within thirty (30) calendar days of EPA's notification, ALCOA shall revise and resubmit said Work Plan to EPA for review and approval, modified in accordance with the deficiencies identified by EPA.

3. Within fifteen (15) calendar days of EPA's approval of the Facility Site Assessment Work Plan, ALCOA shall implement the Work Plan in accordance with the schedules contained therein.

4. Following the completion of the Facility Site Assessment, ALCOA shall submit to EPA for review and approval, in accordance with the schedules contained in the Work Plan, an Initial Facility Site Assessment Report, summarizing the findings of the Site Assessment. If the Site Assessment identifies any areas of actual or potential releases, this Report shall provide for sampling or further investigation of such areas to determine the presence or absence of contamination with: a schedule for implementation, a proposed sampling plan, a QAPP, and a H & SP.

5. After EPA's approval of the Initial Facility Site Assessment Report, ALCOA shall conduct any sampling and analyses or further investigation that may be required. Upon completion of sampling and analyses or further investigation, or upon EPA's approval of said report, if no sampling and analyses or further investigation is required, ALCOA shall submit a Final Facility Site Assessment Report detailing the results of such sampling and analyses and investigations, and/or provide a recommendation for: no further action, additional investigations into known or suspected areas of contamination, or conducting a feasibility study to evaluate alternatives to address areas of contamination at the Facility. Documentation shall be included in the Report to support ALCOA's recommendation(s).

E. PCE Assessment and Removal

1. Within thirty (30) calendar days of the effective date of this Order, ALCOA shall submit to EPA for its review and approval an Initial PCE Assessment Report summarizing ALCOA's past efforts at characterizing the full extent of contaminant migration, in all affected media, including soils removed and stored at the Facility, originating with release from or about the two bulk perchloroethene (PCE) storage tanks, located at the west end of the Facility near the 86-inch CHT Line. This Report shall include work plans, data results from soil, ground water and other affected media sample analysis, QA/QC documentation, locations of samples, data gaps, and shall characterize the extent of contamination.

a. If EPA approves the Initial Report and determines that ALCOA has fully characterized the extent of contaminant migration, EPA shall provide written notification of such to ALCOA.

b. If EPA disapproves the Initial Report or determines that ALCOA has not fully characterized the extent of contaminant migration in all affected media, EPA shall provide written notification of its disapproval and/or the need for additional investigation activities. In this instance, EPA shall specify the reasons for the disapproval or the need for additional work and identify the matters which must be addressed to complete the characterization of the extent of migration of the subject contamination.

c. If EPA determines that the extent of contamination has been fully characterized but that the Initial Report is inadequate, ALCOA shall revise and resubmit to EPA for approval the Initial Report in compliance with EPA's recommendations, within thirty (30) calendar days of receipt of EPA's determination.

2. If EPA determines that the extent of contamination has not been fully characterized, ALCOA shall submit to EPA for its review and approval a PCE Assessment Work Plan, including a location-specific SAP, QAPP, and H & SP designed to address the deficiencies identified by EPA. Said Work Plan shall be submitted within thirty (30) calendar days of ALCOA's receipt of EPA's disapproval notification. Within thirty (30) calendar days of EPA's approval of the PCE Assessment Work Plan, ALCOA shall implement said Work Plan in accordance with the schedules contained therein. Following completion of the field work, ALCOA shall submit to EPA for review and approval a draft Secondary PCE Assessment Report detailing the results of the field work, including analytical results and QA/QC documentation. Following receipt of EPA's comments, ALCOA shall submit a final Secondary PCE Assessment Report to EPA for review and approval, modified in accordance with EPA's comments.

3. Within sixty (60) calendar days of final EPA approval of ALCOA's Initial or Secondary PCE Assessment Report, ALCOA shall submit to EPA for review and approval a Removal Action Work Plan (RAW), which will identify alternative response actions to

address contamination associated with releases in all affected media, including soils removed and stored at the Facility, from the bulk PCE storage tanks. The RAW shall identify a recommended treatment alternative. If treatability study activities are required to demonstrate the applicability of the recommended alternative, such studies should be described in detail in the RAW. In addition, any applicable or relevant and appropriate requirements (ARARs) impacting the removal should be identified in the RAW. A SAP, QAPP and H & SP to cover all field and analytical work during the response action should be included. Finally, the RAW should provide for the implementation of the recommended response action and provide schedules for conducting the work. Upon EPA's initial approval, the RAW will be released for public comment and review.

4. After final EPA approval of the RAW following the applicable public comment period, ALCOA shall implement the RAW (or amended RAW as a result of public comment) in accordance with the schedules contained therein.

5. The approved RAW shall identify a schedule for submittal of a draft Removal Action Report. The report shall be submitted when the removal has achieved cleanup levels or when removal systems are operational and demonstrating compliance with performance standards if the removal is long term in nature, involving such response actions as pumping and treatment. The report shall fully describe implementation of the removal action. Within thirty (30) calendar days following receipt of EPA's comments, ALCOA shall submit the final Removal Action Report to

EPA for review and approval, modified in accordance with EPA's comments.

VII. PROJECT COORDINATORS

1. ALCOA and EPA shall each designate an individual to be its representative for the purpose of overseeing the implementation of the response actions required by the terms of this Order. To the maximum extent practicable, communications between EPA and ALCOA shall be through these representatives.

2. The EPA shall designate a Remedial Project Manager (RPM) who shall have the authority vested in RPMs by the NCP, 40 C.F.R. Part 300. The EPA RPM has the authority to require a cessation of the performance of the response actions required by the terms of this Order that, in the opinion of EPA, may present an imminent and substantial endangerment to public health or welfare or the environment because of an actual or threatened release of a hazardous substance at or from the site. In the event that the EPA RPM requires a cessation of any response action under the terms of this Order, the time for performance of the affected response action(s) shall be extended as appropriate. Disputes between the parties regarding the appropriate extension of time for completion of the affected response action(s) are subject to the dispute resolution procedures of Section XVII, herein. The EPA RPM shall be:

Paul W. Roemerman
Superfund Branch
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

3. ALCOA shall designate a Project Coordinator to act on ALCOA's behalf as representative for oversight of performance of daily operations during implementation of the response actions required by the terms of this Order. ALCOA's Project Coordinator shall be:

Marshall K. Sonksen
Project Coordinator
Aluminum Company of America
Davenport Works
P.O. Box 3567
Davenport, Iowa 52808

4. The EPA and ALCOA have the right to change their respective representatives. Such a change shall be accomplished by notifying the other party in writing at least seven (7) calendar days prior to the change, when possible.

5. The absence of either representative from the site shall not be the cause for stoppage of the work required by the terms of this Order.

6. In the absence of either representative from the site, either EPA or ALCOA may appoint other representatives, including employees or contractors, to serve the representative for oversight of the performance of daily operations during the implementation of response activities required by this Order. Prior to invoking the dispute resolution provision of Section XVII, herein, any dispute between such appointed representatives shall be referred to the EPA RPM and the Project Coordinator for resolution.

VIII. OTHER REPORTING REQUIREMENTS

1. Until such time that all response actions required by this Order have been certified as completed by EPA under Section XXV, herein, ALCOA shall submit written progress reports to EPA on a monthly basis, or on such other periodic basis as the parties may agree. Each progress report shall include, at a minimum, the following:

A. a description of the actions conducted during the applicable reporting period towards compliance with the terms of this Order;

B. a description of all activities scheduled for the next reporting period;

C. copies of all data and sampling and test results which have not been previously transmitted to EPA, received by ALCOA during the applicable reporting period, regardless of whether or not such data or results have undergone ALCOA's QA/QC procedures;

D. a description of all activities scheduled for completion during the applicable reporting period, but which were not completed, along with a statement identifying the reasons why such actions were not completed and an anticipated completion date;

E. a summary which identifies known material problems encountered during the applicable reporting period and anticipated or potential significant problems that affect or may affect compliance or timely compliance with the terms of this Order; and

F. ALCOA's proposed actions or measures to address such existing or anticipated problems.

Each progress report shall be submitted to the EPA RPM by the 15th day of each month immediately following the applicable reporting period, or as otherwise agreed to in writing by the EPA RPM and the Project Coordinator. The first progress report shall be submitted within forty-five (45) calendar days of the effective date of this Order.

2. Identification of problems encountered in the periodic progress reports shall not be construed as "notification to EPA" as specified under the force majeure provisions set forth in Section XVI, herein.

IX. QUALITY ASSURANCE

1. ALCOA and all laboratories used by ALCOA in connection with this Order shall prepare and implement a Quality Assurance/Quality Control Plan(s) (QA/QC Plan) that complies with the applicable EPA guidance documents listed in Appendix A, hereto, including the NEIC Manual for Groundwater/Subsurface Investigations at the Hazardous Waste Sites and the U.S. EPA Contract Laboratory Program Statement of Work for Organic Analysis and any revisions to said documents, upon written notice to ALCOA of such revision(s) by EPA. In order to assure quality assurance/quality control regarding all samples collected pursuant to this Order, the QA/QC Plan(s) required to be submitted by ALCOA under the terms of this Order shall be followed throughout all sample collection and analytical activity

carried out pursuant to the terms of this Order. The QA/QC Plan(s) shall include the following elements:

A. identity of each laboratory to be used for analysis, subject to EPA approval which shall not be unreasonably withheld;

B. assurances that each laboratory perform such analyses according to the EPA analytical methods identified in the document titled Test Methods for Evaluating Solid Wastes (SW-846, November 1986), or other methods approved in writing by EPA pursuant to this Order;

C. assurances that each laboratory shall either be a participant in the EPA Contract Laboratory Program (CLP) and under contract with EPA for conducting chemical analysis for pertinent analytical parameters, or that each laboratory submit for EPA review and approval, a QA/QC Plan documenting that the laboratory: has the ability to perform the required chemical analysis, has an adequate QA/QC program, and can provide the necessary package of CLP deliverables;

D. assurances that EPA analytical methods and protocols, or methods or protocols approved in writing by EPA pursuant to this Agreement, shall be used for chemical analysis of samples;

E. assurances that all laboratories used by ALCOA for analysis shall participate in an EPA or EPA equivalent QA/QC program and that, as part of such program and upon request by EPA, each such laboratory shall perform at the laboratory's

expense, analysis on a reasonable number of samples provided by EPA and necessary to demonstrate the quality of each laboratory's analytical data;

F. assurances that ground water samples and sediment samples shall be collected in accordance with applicable EPA guidance, identified in Attachment A, hereto, to be specified in the applicable work plan; and

G. provisions specifying that EPA personnel, and/or EPA authorized representatives, shall have access at all reasonable times and upon reasonable notice to each laboratory and its personnel regarding the analyses to be conducted pursuant to this Order.

2. Upon reasonable notice, EPA shall be permitted to interview all personnel conducting analyses and sample collection and other field work under this Order.

X. SUBMISSIONS REQUIRING AGENCY APPROVAL

1. Following the receipt of any report, work plan, study, assessment, or other submission required to be submitted by ALCOA under the terms of this Order, whether draft or final, EPA shall review such submittal and notify ALCOA in writing of its final approval, its approval with modification, or its disapproval. If EPA provides final approval to any draft report, work plan, study, assessment, or other submission, such document need not be resubmitted and shall become final for purposes of this Order. In the event of any disapproval or approval with modification,

EPA's comments shall specify in detail both the deficiencies or modifications which must be made prior to approval and the reasons therefor.

2. Notwithstanding anything in this Order to the contrary, if the report, work plan, study, assessment or other submission is disapproved or modifications are required, ALCOA may request a meeting with EPA to discuss such deficiencies or modifications, by providing written notice within fourteen (14) calendar days of receipt of EPA's notification of disapproval or approval with modification. A date for such a meeting shall be scheduled within seven (7) calendar days after EPA's receipt of ALCOA's request, said meeting to take place within twenty-one (21) calendar days of EPA's receipt of ALCOA's request. However, ALCOA and EPA shall use their best efforts to hold said meeting within ten (10) calendar days of EPA's receipt of ALCOA's request.

3. Within thirty (30) calendar days after receipt of EPA's notice of disapproval or approval with modification or, if applicable, within twenty-one (21) calendar days after the aforementioned meeting, ALCOA shall resubmit the report, work plan, study, assessment, or other submission addressing the deficiencies and/or modifying the submittal in accordance with EPA's comments or the changes to such comments as agreed to during the aforementioned meeting, unless ALCOA contests the disapproval or required modifications by invoking the dispute resolution procedures of Section XVII, herein. If upon

resubmission the report, work plan, study, assessment, or other submission is not approved because i) ALCOA has failed to address the deficiencies and/or modify the submission in accordance with EPA's comments or the changes to such comments as agreed to during the aforementioned meeting or ii) ALCOA has failed to address the deficiencies and/or modify the submission as decided as a result of dispute resolution, ALCOA shall be in violation of this Order and, if applicable, stipulated penalties shall begin to accrue.

4. All reports, work plans, studies, assessments, notifications and other submissions relating to this Order shall be forwarded to the EPA RPM designated under Section VII of this Order.

5. Any report, work plan, study, or assessment required to be submitted to EPA under the terms of this Order is, upon written approval by EPA, incorporated into this Order without any modification of the Order pursuant to Section XXIV, herein. Any noncompliance with EPA approved work plans, or any specification, schedule, appendix, or attachments contained therein, or any other EPA approved submittal, unless modified or extended as provided in this Order, may be considered by EPA to be a failure to comply with terms and provisions of this Order.

XI. ACCESS

1. ALCOA shall provide access to EPA and its authorized representatives, including contractors, upon reasonable prior notice, to any portion of the Facility that is necessary to

ensure compliance with the terms of this Order, including all areas where any activity is being conducted or has been conducted pursuant to this Order. EPA and its authorized representatives shall be able to enter and move about the Facility at all reasonable times for purposes of:

A. interviewing ALCOA's personnel and contractors with respect to activities being conducted pursuant to this Order;

B. inspecting and copying records, files, photographs, operating logs, contracts and any other documents related to the work or other requirements imposed by this Order, subject to Paragraph 2 of Section XIV regarding confidentiality;

C. reviewing the progress of ALCOA in carrying out the terms of this Order;

D. observing all sampling and tests being performed pursuant or relating to this Order, as EPA or its representatives deem necessary, using a camera, sound recording or other documentary type equipment to verify that work performed pursuant to this Order is proceeding on schedule and to verify the accuracy of the reports, studies, assessments and data submitted to EPA by ALCOA (copies of any photographs or tape recordings or similar recordings taken by EPA shall be provided to ALCOA in an expeditious manner after said event); and

E. collecting such samples or conducting such tests as EPA determines are necessary or desirable to monitor compliance with the terms of this Order, provided that EPA shall provide ALCOA with prior notice in advance of any sampling or testing

activities (EPA shall attempt to provide ALCOA with at least seven (7) calendar days prior notice of such scheduled activities).

2. All persons provided access to the Facility pursuant to this Order shall comply with applicable health and safety procedures and requirements approved under the terms of this Order.

3. EPA's liability for damages to the Facility or injuries to persons which result from or are caused by the activities at the Facility shall be to the extent permitted by the Federal Torts Claims Act, and the Federal Employees Compensation Act (28 U.S.C. Section 2671 et seq. and 5 U.S.C. Section 8101 et seq.).

4. This Section of the Order, or any other provision of this Order, is not intended and shall not be construed as limiting or otherwise affecting EPA's right of access and entry pursuant to applicable law.

XII. COST REIMBURSEMENT

1. ALCOA shall reimburse EPA for all costs, including indirect costs, incurred by EPA after the effective date of this Order, which costs relate to this Order and are not inconsistent with the NCP. Costs that "relate to this Order" shall primarily be those costs that are incurred in overseeing the implementation of the work performed by ALCOA pursuant to this Order, including costs incurred by EPA in reviewing or developing work plans,

reports, assessments and other items required under this Order, but excluding costs incurred by EPA in conducting the Risk Assessment referred to in Section VI.A.10 (Nothing herein shall obligate ALCOA to pay past costs incurred by EPA prior to the effective date of this Order. EPA specifically reserves the right to seek reimbursement from ALCOA for past costs and costs incurred in conducting the Risk Assessment, in addition to costs that do not relate to this Order). Within ninety (90) calendar days of the end of each federal fiscal year following the effective date of this Order, EPA will submit to ALCOA in writing a notification identifying and demanding payment of all costs incurred and disbursed by EPA during the subject fiscal year that relate to this Order. EPA's notification shall contain a general itemization of said costs and available supporting documentation (excluding timesheets). Payment by ALCOA shall be made check or wire transfer within forty-five (45) days of receipt of EPA's notification demanding payment and shall be payable to the EPA Hazardous Substances Superfund.

2. Each check or wire transfer submitted by ALCOA pursuant to this Section, and/or transmittal letters, shall reference the name of the site and the docket number of this Order and shall be sent to:

Mellon Bank
Attention: Superfund Accounting
EPA Region VII (Comptroller Branch)
P.O. Box 360748M
Pittsburgh, Pennsylvania 15251

Copies of the check or evidence of the wire transfer and any transmittal letter shall be sent to the EPA RPM within one (1) day after payment is made. Each payment made will be applied first to any interest due, with the remaining amount applied to outstanding principal.

3. During any fiscal year, following the effective date of this Order, certain costs may be incurred by EPA but not disbursed and therefore not billed to ALCOA under Paragraph 1 of this Section. Such costs that are incurred but not disbursed shall be billed in the EPA notification and demand for payment, and subsequently paid by ALCOA, following the end of the fiscal year such costs are actually disbursed.

4. ALCOA agrees to pay interest on any amount that is due and owing under this Section of the Order. Such interest shall begin to accrue upon the forty-sixth (46) day following ALCOA's receipt of any EPA notification and demand for payment under Section XII.1 of this Order, unless ALCOA has invoked the dispute resolution provisions of Section XVII of this Order pursuant to Paragraph 5, below. In such event, interest shall not accrue on any amount due and owing that is subject to the dispute until the third business day after the dispute is resolved pursuant to Sections XVII.3 or 10 of this Order or, if unresolved, after ALCOA's receipt of the written decision referred to in Section XVII.11 of this Order. The rate of interest shall be determined by the Secretary of Treasury (currently 8.47 percent per annum for the period October 1, 1989 through September 30, 1990), as

set forth in 42 U.S.C. Section 9607(a), on the unpaid balance until such costs and accrued interest have been fully paid. On October 1 of each subsequent federal fiscal year, any unpaid balance will begin accruing interest at a new rate to be determined by the Secretary of the Treasury.

5. If ALCOA believes that all or any part of EPA's response costs, required to be paid to EPA by ALCOA pursuant to this Section, are inconsistent with the NCP or not otherwise chargeable to ALCOA, ALCOA shall notify EPA of such belief in writing and in detail, and the dispute resolution provisions of Section XVII shall thereafter apply.

XIII. STIPULATED PENALTIES

1. Subject to the force majeure provisions of Section XVI and the dispute resolution provisions of Section XVII, herein, or subject to written approval of a modification of a compliance date or the deadline by EPA for the affected report or document, ALCOA shall be liable to EPA and pay stipulated penalties as set forth below.

A. For failure to submit monthly progress reports as prescribed in this Order: \$250.00 per day for the first through seventh day of noncompliance, \$500.00 per day for the eighth through the fifteenth day, and \$1,000.00 per day for the sixteenth day and each succeeding day of noncompliance thereafter.

B. For failure to submit reports (other than monthly progress reports), work plans, studies, or assessments as

prescribed in this Order: \$500.00 per day for the first through seventh day of noncompliance, \$1,000.00 per day for the eighth through the fifteenth day of noncompliance, \$2,000.00 per day for the sixteenth through the thirtieth day, and \$4,000.00 per day for the thirty-first day and each succeeding day of noncompliance thereafter.

C. For failure to meet any required compliance deadline (excepting submissions of reports, work plans, studies, or assessments), set forth in, or established pursuant to this Order: \$500.00 per day for the first through seventh day of noncompliance, \$2,000.00 per day for the eighth through twentieth days of noncompliance, and \$4,000.00 per day for the twenty-first day and each succeeding day of noncompliance thereafter.

2. Stipulated penalties shall begin to accrue on the date following the date on which performance was due or a violation occurred and shall continue to accrue through the final day of correction of the noncompliance. Should ALCOA fail to meet an interim deadline, but meet the related subsequent deadline for any work conducted pursuant to this Order, the stipulated penalties for failure to meet such interim deadline shall, upon meeting such subsequent deadline, be forgiven. Where a subsequent deadline is to be calculated on the basis of a certain number of days after an interim deadline which ALCOA failed to meet, then for purposes of determining whether a subsequent deadline has been met, the subsequent deadline shall be reduced

by the number of days ALCOA was late in meeting such interim deadline. Stipulated penalties shall not accrue during a dispute resolution proceeding invoked by ALCOA in good faith. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Order.

3. Stipulated penalties shall be paid within thirty (30) calendar days of receipt of written notification from EPA demanding payment of such penalties, which shall state the basis for the stipulated penalty, unless ALCOA invokes the dispute resolution provision of Section XVII, herein. Interest shall begin to accrue on the unpaid balance on the date following the end of this thirty-day period at the rate established by applicable law for any period of such delinquency. All penalties shall be paid by check or wire transfer to the EPA Hazardous Substances Superfund and sent to:

Mellon Bank
Attention: Superfund Accounting
EPA Region VII (Comptroller Branch)
P.O. Box 360748M
Pittsburgh, Pennsylvania 15251

The check or the wire transfer and any transmittal letter shall reference the name of the site and the docket number of this Order and shall reference that it is payment for stipulated penalties. Copies of the check or evidence of the wire transfer and any transmittal letter shall be sent to the EPA RPM within one (1) day after payment is made.

4. Nothing in this Order shall be construed to prevent EPA's waiver of imposition of all or any part of any stipulated penalty.

5. The stipulated penalties set forth in this Section do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of ALCOA's failure to comply with any of the requirements of this Order, nor shall payment of said penalties relieve ALCOA of the responsibility to comply with the terms of this Order.

XIV. ACCESS TO INFORMATION

1. Notwithstanding the provisions of Section VIII, herein, ALCOA shall, upon written request, provide documents or records to EPA and information within its possession or control, or possession or control of its contractors or agents, that relate to activities undertaken pursuant to this Order. Such documents or records and information include, without limitation: sample analysis and chain of custody records, manifests, receipts, reports, environmental monitoring records, correspondence and other records related to the requirements of this Order. Nothing herein shall require or be deemed to require ALCOA to provide to EPA any documents which constitute attorney/client communication or are attorney work-product. However, to the extent ALCOA asserts such a privilege with respect to any document required to be submitted to EPA under the provisions of this Order, ALCOA shall specify the document to which ALCOA believes the privilege applies, by providing certain information identifying the document, including: the date, author, recipient, number of pages, and a brief description of the subject matter of the document.

2. Except as provided for herein, ALCOA may assert a business confidentiality claim as to all or any part of any document, record and information submitted to EPA under the terms of this Order, to the extent permitted by and in accordance with the procedures set forth in Section 104(e)(7) of CERCLA, 42 U.S.C. Section 9604(e)(7), and Subpart B of 40 C.F.R. Part 2. For any claim of business confidentiality asserted by ALCOA on documents, records or information, or portions thereof, submitted pursuant to this Order, EPA shall treat such documents, records or information in accordance with Subpart B of 40 C.F.R. Part 2. If no claim of confidentiality is asserted with respect to a specific document, record or information when it is submitted to EPA, such document, record or information shall thereafter be publicly available without further notice to ALCOA. Documents, records or information entitled to confidential treatment under federal law will be afforded the protection specified in Subpart B of 40 C.F.R. Part 2. In accordance with Section 104(e)(7)(F) of CERCLA, 42 U.S.C. Section 9604(e)(7)(F), certain information, identified therein and which concerns hazardous substances at the site, shall not be entitled to confidential treatment.

XV. RECORD PRESERVATION

ALCOA shall, without regard to any document retention policy to the contrary, preserve during the pendency of this Order and for a minimum of six (6) years after its termination all records and documents in its possession, custody or control which relate to the work performed pursuant to this Order, including records

and documents that relate to work performed hereunder which concerns hazardous substances generated, stored, treated or disposed of at the site, or the release or threatened release of hazardous substances from the site. After this six (6) year period has lapsed, ALCOA shall notify EPA at least sixty (60) calendar days prior to the destruction of any such document. Upon request by EPA, ALCOA shall make available to EPA such documents or copies of such documents, subject to Paragraph 2 of Section XIV of this Order. In the event EPA fails to provide notice to ALCOA within the aforementioned sixty (60) day period that EPA wishes to assume custody of such records or documents, nothing herein shall require or be deemed to require ALCOA to retain custody of such records or documents after the expiration of the such sixty (60) day period. Nothing herein shall require or be deemed to require ALCOA to provide to EPA any documents which constitute attorney/client communication or attorney work-product, subject to the identification requirements of Section XIV.1, herein.

XVI. FORCE MAJEURE

1. ALCOA shall perform the requirements of this Order, including all approved investigations, studies, assessments and work plans, in accordance with the schedules established pursuant to this Order, or as otherwise agreed to by ALCOA and EPA, unless the performance is prevented or delayed by an event which constitutes a force majeure. For purposes of this Order, force

majeure is defined as any event not reasonably foreseeable by, or arising from causes entirely beyond the control of, ALCOA, including its consultants and contractors, that delays the timely performance of any obligation under this Order, and which could not be overcome by the exercise of due diligence by ALCOA.

Examples of events that are not force majeure events include, but are not limited to: increased costs or expenses of any work to be performed under this Order, changed economic circumstances of ALCOA, normal inclement weather, or failure of ALCOA to make timely and complete application for any required federal, state or local permit or approval.

2. If any event occurs or has occurred that ALCOA knows or should know constitutes a force majeure, thereby delaying the performance of any obligation under this Order, ALCOA shall notify the EPA RPM by telephone on the next business day following the day of when ALCOA first knew that the event might cause a delay. Within seven (7) calendar days thereafter, ALCOA shall provide to the EPA RPM a written notification which shall include: an estimate of the anticipated duration of the delay, a description of the cause or causes of the delay, the measures taken or to be taken to minimize the delay, and a schedule for implementation of any measure to be taken to mitigate the effect of the delay. ALCOA shall exercise due diligence to avoid or minimize any delay and any effects of a delay. Failure to comply with either notice requirement of this Paragraph shall constitute a waiver of ALCOA's right to assert a force majeure.

3. If EPA determines that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the work or other obligation under this Order which is affected by the force majeure event, and any subsequent affected work or other obligation, shall be extended by agreement of ALCOA and EPA pursuant to Section XXIV of this Order for a period of time not to exceed the actual duration of the delay caused by the force majeure event; except that, when the affected work or other obligation concerns the collection of fish for samples that must occur during specific seasons pursuant to Section VI.B of this Order, in that event the period of time for compliance shall be extended by agreement as may be appropriate to allow completion of the affected work or other obligation required by Section VI.B. An extension of the time for performance of the work or other obligation affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation under this Order.

4. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, or does not agree with ALCOA on the length of the extension, the issue in dispute shall be subject to the dispute resolution procedures set forth in Section XVII of this Order. To qualify for a force majeure defense, ALCOA shall have the burden of demonstrating by a preponderance of the evidence: that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay was or will be

warranted under the circumstances, that due diligence was or will be exercised to avoid and mitigate the effects of the delay, and that ALCOA complied with the requirements of Paragraph 2 of this Section. Should ALCOA carry this burden, the delay at issue shall be deemed not to be a violation by ALCOA of the affected obligation(s) of this Order.

XVII. DISPUTE RESOLUTION

1. ALCOA and EPA shall use their best efforts at all times to resolve, informally and in good faith, all disputes or differences of opinion.

2. If a disagreement is not resolved informally, ALCOA may pursue the matter more formally by placing its objections in writing. If ALCOA formally disagrees, in whole or in part, with any EPA disapproval or modification or other decision or directive made by EPA pursuant to this Order, ALCOA shall send notice to the Superfund Branch Chief of EPA, Region VII in writing of its objections, and the basis therefor, within ten (10) calendar days after receipt of EPA's disapproval, modification, decision or directive, or within ten (10) calendar days after any meeting held between ALCOA and EPA pursuant to Section X.2 of this Order. Said notice shall set forth the specific points of dispute, the position ALCOA is maintaining and why it is consistent with the requirements of this Order, the factual and legal bases for ALCOA's position, ALCOA's proposed resolution, and any other matter ALCOA considers necessary. EPA and ALCOA shall then have an additional fourteen (14) calendar

days from EPA's receipt of ALCOA's notification to attempt to resolve the dispute. If agreement is reached, the resolution shall be reduced to writing, signed by the representatives of each party and incorporated into this Order.

3. Except for disputes concerning matters described in Paragraph 4, following, if the parties are unable to reach agreement within the fourteen (14) day period provided for in Paragraph 2, above, the Superfund Branch Chief will promptly provide to ALCOA a written decision on the dispute, which upon issuance shall be incorporated into this Order. ALCOA shall comply with this decision after receipt thereof.

4. If a dispute arises under this Order regarding a "Disputed Matter" which the parties are unable to resolve pursuant to Paragraph 2, above, the dispute shall be resolved as set forth in Paragraphs 5 through 11, following. For purposes of this Order, a Disputed Matter may include disputes relating to: (1) the initial or revised or final Sediment/Soil Investigation Work Plan, the field sampling plans or detailed work plans for each phase of the Sediment/Soil Investigation Work Plan, draft or final phase reports, the draft or revised or final Sediment/Soil Investigation Report, draft or revised or final Feasibility Study Work Plan or the draft or revised or final Feasibility Study Report, all required by Section VI.A of this Order; (2) the draft, revised or amended or final Fish Sampling and Analysis Work Plans or the draft or revised or final Fish Sampling and Analysis Reports, required by Section VI.B of this Order; (3) the

draft or revised or final Facility 86-inch CHT Line Assessment Work Plan, the draft or revised or final CHT-Line Contamination Assessment Report, the draft or revised or final Removal Action Work Plan or the draft or revised or final Removal Action Report, required by Section VI.C of this Order; (4) the draft or revised Facility Site Assessment Work Plan or the initial or revised or final Facility Site Assessment Report, required by Section VI.D of this Order; (5) the draft or revised Initial PCE Assessment Report, the draft or revised PCE Assessment Work Plan, the draft or revised or final Secondary PCE Assessment Report, the draft or revised or final Removal Action Work Plan or the draft or revised or final PCE Removal Action Report, required by Section VI.E of this Order; (6) the existence of an occurrence giving rise to a stipulated penalty under Section XIII of this Order; (7) cost reimbursement sought by EPA under Section XII of this Order; (8) the appropriate extension of time for completion of response actions if ceased pursuant to Section VII.2 of this Order; (9) conflicts between local, state and federal laws and regulations and work plans or documents approved by EPA and referred to in Section X, herein; (10) the existence of a force majeure event or the length of the extension under Section XVI of this Order; and (11) issues related to the termination of this Order pursuant to Section XXV, herein.

5. Within forty-five (45) days of the effective date of this Order, the parties shall each nominate by listing in writing five persons to serve as mediators for any Disputed Matter. No

current employee of ALCOA or EPA shall be nominated to serve as mediators hereunder. All listed persons not rejected in writing within fourteen (14) calendar days after receipt of any list submitted by one party to the other party shall be deemed to be acceptable mediators for any Disputed Matter. Consideration of the acceptability of the nominated mediators by the parties shall be conducted in good faith. If at the end of this fourteen (14) day period all such listed persons are rejected, or if at any time it becomes apparent to the parties that less than two acceptable mediators remain able or willing to serve, further lists of five names shall be submitted in seven (7) calendar day periods with fourteen (14) day periods after receipt of such lists for accepting or rejecting such proposed mediators. This seven (7) day/fourteen (14) day cycle will continue until at least two acceptable mediators have been identified by the foregoing procedure or for three, seven day/fourteen day cycles, whichever occurs first. The lists to be submitted to the other party shall set forth the name, business, relevant affiliation, qualifications, address, and telephone number of each nominee.

6. The parties agree that should they not be able to resolve a Disputed Matter after attempting negotiations for fourteen (14) calendar days as provided for in Paragraph 2 of this Section, then they will engage in mediation. During the next three (3) business days after the end of such fourteen (14) day period, the parties shall attempt to agree upon a mediator from the list of acceptable mediators determined pursuant to

Paragraph 5 of this Section. If a mediator who is willing and able to serve is not agreed upon within three (3) business days after a request for appointment of a neutral mediator is made, the requesting party may select any mediator from the list of acceptable mediators and such mediator shall be invited by the parties to serve. Mediation of any Disputed Matter shall not exceed thirty (30) calendar days, and shall begin on the date selected by the mediator for the first meeting to be held by the mediator with a party or the parties. The initial date for the first meeting to be held by the mediator shall be established by the mediator, but in no event shall said first meeting be held longer than fourteen (14) calendar days from the date the mediator is invited to serve. The parties further agree that they will share equally the fees and expenses that relate to the use of any mediator aiding the parties during such process, and EPA's share of such fees and expenses shall not be reimbursable costs pursuant to Section XII of this Order.

7. The existence of a Disputed Matter as defined in Paragraph 4 of this Section of the Order, the request for mediation and the consideration of matters placed into dispute, shall not excuse, toll or suspend any compliance obligation or deadline required pursuant to this Order during the pendency of the mediation resolution process, unless it is the subject to the dispute, or dependent thereon, and shall in no event be considered a force majeure.

8. During any such period in which either party in good

faith has invoked these mediation procedures for Disputed Matters, and for the fourteen (14) day negotiation period immediately preceding the mediation period on such matters referred to Paragraph 2 of this Section, no penalty shall be payable for the period of time such proceedings are pending.

9. The mediator's role shall be limited to facilitating negotiations between the parties. The mediator shall not offer a decision on the merits of the dispute nor shall he/she offer an opinion on the technical merits of the position of either of the parties. The mediator shall make no written findings or recommendations. Mediation sessions shall not be recorded verbatim and no formal minutes or transcripts shall be maintained. Meetings or conferences with the mediator shall be treated as confidential. Statements made by any person during any such meeting or conference shall be deemed to have been made during compromise negotiations within the meaning of Rule 408 of the Federal Rules of Evidence, and applicable state rules of evidence, and shall not be offered into evidence in any proceeding by any person. The mediator will be disqualified as a witness, consultant, or expert in any pending or future action relating to subject matter of the mediation, including those between persons not a party to the mediation. Failure to comply with the mediation confidentiality requirement is a basis for termination of mediation.

10. Any Agreement reached pursuant to these mediation procedures described in this Section shall be memorialized in

writing and shall be effective when such Agreement is signed by all parties to the Order, and shall be deemed a modification to the Order pursuant to Section XXIV of this Order.

11. If the parties are unable to reach agreement by the use of mediation after the thirty (30) day period described in Paragraph 6, above, EPA shall provide its decision on the pending dispute in writing within ten (10) business days thereafter, which upon issuance shall be incorporated into this Order. Such decision shall be issued by the Director of the Region VII Waste Management Division, and after receipt of such decision by ALCOA, ALCOA shall comply with said decision.

12. Any time frame specified under the aforementioned dispute resolution process may be extended by mutual written agreement of EPA and ALCOA.

13. Notwithstanding any other provision of this Order, no action or decision by EPA, including without limitation, decisions of the Regional Administrator, Division Director or Superfund Branch Chief, or their designees, pursuant to this Order, shall constitute final agency action giving rise to any rights to judicial review prior to EPA's initiation of judicial action to compel ALCOA's compliance with the requirements of this Order.

XVIII. RESERVATION OF RIGHTS

1. Except as specifically provided in this Order, nothing herein shall constitute or be construed as a release from

liability for ALCOA, nor for any of ALCOA's officers, directors, officials, employees, agents, consultants, receivers, trustees, successors or assigns.

2. Notwithstanding compliance with the terms of this Order, ALCOA is not released from liability, if any, for any actions taken by EPA with respect to the site for matters not addressed by the terms of this Order. EPA reserves the right to bring or take any action under appropriate laws, based on ALCOA's liability for matters not addressed by this Order.

3. EPA reserves the right to bring an action pursuant to CERCLA and/or any other available legal authority for appropriate relief, including, but not limited to, injunctive relief, monetary penalties, and punitive damages for any violation of law or this Order. In the event ALCOA fails to comply with the terms of this Order, EPA also reserves the right as appropriate: to prepare, in whole or in part, submissions required by this Order and to undertake response action(s) to address the release or threat of release of hazardous substances from the site and to seek reimbursement from ALCOA thereafter for such costs incurred by the United States.

4. In entering this Order, ALCOA specifically waives any right to seek reimbursement under Section 106(b)(2) of CERCLA, 42 U.S.C. Section 9606(b)(2), for any past costs and costs incurred in complying with this Order. Nothing herein shall be considered to be a preauthorization of a CERCLA claim within the meaning of Section 111(a)(2) of CERCLA, 42 U.S.C. Section 9611(a)(2), and 40 C.F.R. Section 300.25(d).

5. Unless specifically waived herein, in any proceeding to enforce the terms of this Order, ALCOA reserves all legal and equitable rights and defenses it may have under this Order, CERCLA, the Resource Conservation and Recovery Act of 1976, as amended (RCRA), or any other legal authority, including all arguments concerning compliance with the specific tasks and requirements of this Order. Unless specifically waived herein, ALCOA further reserves the right to bring any action pursuant to CERCLA and/or any other available legal authority against other potentially responsible parties.

6. Compliance by ALCOA with the terms of this Order shall not relieve ALCOA of their obligations to comply with provisions of the Resource Conservation and Recovery Act of 1976, as amended ("RCRA"), or any other applicable local, state or federal law or regulation.

XIX. INDEMNIFICATION OF THE UNITED STATES

1. ALCOA shall indemnify, save and hold harmless the United States Government, its agencies, departments, agents and employees, from any and all claims or causes of action arising from or on account of acts or omissions of ALCOA or its officers, employees, agents, contractors or subcontractors, in carrying out any activity pursuant to this Order. The EPA RPM shall notify ALCOA of any such claim or cause of action within thirty (30) calendar days of his/her receiving notice that such a claim or cause of action is anticipated or has been filed.

2. The foregoing indemnification shall not be construed in any way as affecting or limiting the rights and obligations of ALCOA or the United States under their various contracts. Neither the United States Government nor any of its agents, departments, agencies, employees, or contractors shall be represented, held out, construed or deemed to be a party to any contract, agreement, understanding, or arrangement by ALCOA in carrying out any activity, task or obligation pursuant to this Order.

XX. OTHER CLAIMS

Unless specifically provided for herein, nothing in this Order shall constitute or be construed as a release from any claim, cause of action, or demand at law or in equity against any person, firm, partnership or corporation for any liability it may have arising out of or relating in any way to the generation, storage, handling, transportation, release or disposal of any hazardous waste, hazardous constituent, hazardous substance, pollutant or contaminant found at, taken to, or taken from the Facility.

XXI. PENALTIES FOR NONCOMPLIANCE

1. ALCOA is hereby advised that, pursuant to Section 106(b) of CERCLA, 42 U.S.C. Section 9606(b), any person who, without sufficient cause, willfully violates, or fails or refuses to comply with, this Order may, in addition to an action brought in the appropriate United States district court to enforce this

Order, be fined not more than \$25,000 for each day in which such violation occurs or such failure to comply continues.

2. ALCOA is further advised that, pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. Section 9607(c)(3), any person, who is liable for a release or threat of release of a hazardous substance and who fails without sufficient cause to provide properly the response actions specified in this Order, may be liable to the United States for punitive damage in an amount at least equal to and not more than three times the amount of any costs incurred by the United States as a result of such failure to take proper action.

XXII. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Order shall be undertaken in accordance with the requirements of all applicable local, state and federal laws and regulations. No local, state or federal permit shall be required for any portion of any action conducted entirely at the Facility, including studies, where such action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. Section 9621. To the extent there is a conflict between such laws and regulations and any work plan or other document approved by EPA in accordance with Sections VI or X of this Order, including any approved modification to such work plan or other document, EPA and ALCOA shall meet in an effort to resolve such conflict, which shall be subject to the dispute resolution procedures of Section XVII, herein.

XXIII. SEVERABILITY

If any provision or authority of this Order, or the application of this Order to any party or circumstance, is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties and circumstances and the remainder of the Order shall remain in full force and effect, and shall not be affected by such holding.

XXIV. MODIFICATION

1. This Order may be amended by mutual agreement of EPA and ALCOA. Such agreements shall be in writing and shall have as the effective date, the last date on which such amendments are executed by either EPA or ALCOA, unless otherwise specified therein.

2. No informal advice, guidance, suggestions or comments by EPA regarding reports, plans, specifications, schedules and any other writing submitted by ALCOA shall either be considered a modification to this Order or be construed as relieving ALCOA of its obligation to obtain such formal approval as may be required by this Order.

XXV. TERMINATION

Except for the requirements of Section XV, herein, the provisions of this Order shall remain in full force and effect until all actions required by this Order have been completed. ALCOA shall notify EPA in writing at such time as it believes all

such actions have been completed. If ALCOA demonstrates and EPA agrees that ALCOA has achieved compliance with all terms of this Order, EPA shall provide written notice to ALCOA that the terms of this Order, except for any outstanding cost and penalty payment obligations of Sections XII and XIII and the record preservation provisions of Section XV, have been completed. If EPA determines that ALCOA has failed to comply with all the terms of this Order or EPA fails to notify ALCOA within one hundred eighty (180) calendar days of EPA's receipt of ALCOA's notice of completion, ALCOA shall have the right to invoke the dispute resolution provisions of Section XVII, herein.

XXVI. DISCLAIMER

By signing this Order and taking actions under this Order, ALCOA does not agree with EPA's Findings of Fact, Conclusions of Law, and Determinations. Furthermore, the participation of ALCOA in this Order shall not be considered an admission of liability and is not admissible in evidence against ALCOA in any judicial or administrative proceeding other than a proceeding by the United States, including EPA, to enforce this Order or a judgment relating to it. ALCOA retains its rights to assert claims against other potentially responsible parties for matters addressed by this Order. However, ALCOA agrees not to contest the validity of this Order or the process underlying it in any action brought by the United States, including EPA, to enforce its terms.

XXVII. EFFECTIVE DATE

This Order is effective immediately upon receipt of a fully executed copy of this Order by ALCOA, and all times for performance of actions pursuant to this Order shall be calculated from that date.

July 18, 1990
Date

By: V. R. Scorsone
V. R. Scorsone
Group Vice President-
Aerospace and Industrial
Products
Aluminum Company of America

July 19, 1990
Date

By: J. Scott Pemberton
J. Scott Pemberton
Assistant Regional Counsel
EPA, Region VII

IT IS SO ORDERED:

July 19, 1990
Date

By: Carl V. Blomgren
FOR David A. Wagoner
Director, Waste Management
Division
U.S. Environmental
Protection Agency
Region VII

APPENDIX A

REFERENCE DOCUMENTS

"Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," US EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01.

"A Compendium of Superfund Field Operations Methods," Two Volumes, US EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.

"EPA NEIC Policies and Procedures Manual," May 1978, revised November 1984, EPA-330/9-78-001-R.

"Data Quality Objectives for Remedial Response Activities," US EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.

"Guidelines and Specifications for Preparing Quality Assurance Project Plans," US EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.

"Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," US EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.

"Users Guide to the EPA Contract Laboratory Program," US EPA, Sample Management Office, August 1984, OSWER 9240.0-01.

"Interim Guidance on Compliance with Applicable or Relevant and Appropriate Requirements," US EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.

"CERCLA Compliance with Other Laws Manual," Two Volumes, US EPA, Office of Emergency and Remedial Response, August 1988, (draft), OSWER Directive No. 9234.1-01 and -02.

"Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites," US EPA, Office of Emergency and Remedial Response, Interim Final, December 1988, OSWER Directive No. 9283.1-2.

"Draft Guidance on Preparing Superfund Decision Documents," US EPA, Office of Emergency and Remedial Response, March 1988, OSWER Directive No. 9355.3-02.

"Superfund Public Health Evaluation Manual," US EPA, Office of Emergency and Remedial Response, EPA/540/1-86/060, October 1986, OSWER Directive No. 9285.4-1.

"Superfund Exposure Assessment Manual," US EPA, Office of Emergency and Remedial Response, Fall 1988, OSWER Directive No. 9285.5-1.

"Interim Final Risk Assessment Guidance for Superfund - Environmental Evaluation Manual," US EPA, Office of Emergency and Remedial Response, July 1989, OSWER Directive No. 9285.7-01.

"Health and Safety Requirements of Employees Employed in Field Activities," US EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.

OSHA Regulations in 29 C.F.R. 1910.120 (Federal Register 45654, December 19, 1986).

"Interim Guidance on Administrative Records for Selection of CERCLA Response Actions," US EPA, Office of Waste Programs Enforcement, March 1, 1989, OSWER Directive No. 9833.3A.

"Revised Procedures for Implementing Offsite Response Actions," Directive No. 9834.11, November 13, 1987, Office of Waste Programs Enforcement.

"Guidance for Sampling of and Analyzing for Organic Contaminants in Sediments," U.S. EPA, Office of Water, Regulations and Standards, January 1987, EPA 0525.

"A Discussion of PCB Target Levels in Aquatic Sediments," Ocean Assessments Division, National Oceanic and Atmospheric Administration, January 1988.

"Interim Sediment Criteria Values for Nonpolar Hydrophobic Organic Contaminants," U.S. EPA, Office of Water, Regulations and Standards, May 1988, SCD #17, EPA 0524.

"Briefing Report to the EPA Science Advisory Board on the Equilibrium Partitioning Approach to Generating Sediment Quality Criteria," U.S. EPA, Office of Water, Regulations and Standards, April 1989, EPA 440/5-89-002.